Occupational Health and Safety Plan

Prepared for

Prepared by
Al Irvine, B.Sc., R.P.Bio.
New Graph Environment Ltd.

Version 0.0.2 2023-05-26

Table of Contents

Acknowledgement

Modern civilization has a long journey ahead to acknowledge and address the historic and ongoing impacts of colonialism that have resulted in harm to the cultures and livelihoods living interconnected with our ecosystems for many thousands of years.

1 Safety Policy

At New Graph Environment we believe that all injuries are preventable and that safety is the responsibility of everyone. We believe that getting hurt at work is not acceptable and that by building a culture of safety we:

- will look ahead to identify hazards,
- will document safety procedures and ensure that our management, staff and contractors are familiar with them and understand why we have them,
- will strive for continuous improvement to ensure that we learn from the past and look to the future to facilitate the safest working environment possible for ourselves, our contractors, our clients and the public.

1.1 Forest Safety Accord

THE SAFETY ACCORD
OF THE BC FOREST INDUSTRY

Our Key Beliefs:

- We believe that all fatalities and injuries are preventable.
- We believe in a culture where the health and safety of all workers is an over-riding priority.
- We believe that excellence in health and safety is important to our long-term success.

Shared Responsibility:

- We are collectively and individually responsible for the safety of all workers and all worksites.
- Individuals must assume responsibility for their own safety and the safety of co-workers by following all safety rules, procedures and practices; by refusing to perform unsafe work; and by taking collective responsibility for the unsafe conduct of others.
- Tenure holders, licencees and prime contractors must take a leadership role in ensuring worker health and safety and assuring accountability for safety on the worksite.

Recognition of Safety Performance and Practices:

- The commitment to health and safety is to all workers, not just direct employees. When engaging contractors, sub-contractors and others to provide services, the selection process and administration of contracts will include recognition and support of good safety performance and practices.
- Employers will recognize and support the safety performance of their employees.
- All owners of forested lands, tenure holders and licencees will give weight to the safety record and current practices of companies in the awarding of contracts and in the determination of fees and levies.

Commitment to Training and Supervision:

- We understand the importance of workers being fully prepared for the work they do and the provision of competent supervisors who will insist on and enforce safe work practices. All workers on the worksite must be competent and fully trained and certified for the work they are performing.

Legislation:

- It is understood that the regulatory environment of the Forest Industry can have profound impacts on safety. Accordingly, government ministries and agencies must take into account the importance of health and safety when developing, reviewing and drafting applicable areas of law and regulation.

Continual Improvement:

- We are committed to the on-going improvement of our practices and support efforts to develop and implement new methods, procedures and technologies that have the potential to improve safety.

WorkSafe
WORKERS' COMPENSATION BOARD OF BC

BC Forest Safety Council
Unsafe is Unacceptable

1.2 Corrective Action Log

These corrective actions are to be completed by the person indicated, within the time frame allotted. If more time is required, or there are difficulties encountered, please contact Allan Irvine for assistance.

Item	Company Action Plan	Person Responsible	Due Date	Date Closed

1.3 Safety Team Members

As a small company all management and staff are considered safety team members and expected to integral to the safety program. Feedback is encouraged as continual improvement is a paramount goal.

1.4 Job Roles and Responsibilities

1.4.1 Right to refuse work and report unsafe conditions

You have the right to refuse unsafe work if you have reasonable cause to believe the work you are doing could create a hazard or cause an injury. Identify hazards before starting work and determine whether it is safe to proceed. This is work and it is not worth it to risk life and limb.

1.5 COVID 19 Prevention and Risks

We have developed a COVID-19 Safety Plan that outlines the policies, guidelines, and procedures to reduce the risk of COVID-19 transmission.

All staff, contractors, volunteers, and participants must complete a self-assessment (https://bc.thrive.health/covid19/en) before starting work each day. If they are experiencing any symptoms related to COVID-19 they must halt all involvement or participation, notify the project supervisor, and get officially tested.

The virus that causes COVID-19 spreads in several ways, including through droplets when a person coughs or sneezes, or from touching a contaminated surface before touching the face. Planning to COVID-19 is a moving target and should be a continuous effort. Planning is outlined by WCB (https://www.worksafebc.com/en/about-us/covid-19-updates/covid-19-returning-safe-operation). Detailed procedures are included in the safe work procedures in the Appendices of this document and were developed by progressing through the following steps:

1. Assess the risk at your workplace to identify places where the risk of transmission is introduced

    a. What job tasks or processes require workers to come into close proximity with one another or members of the public?

    b. What tools, machinery, and equipment do people come into contact with in the course of their work?

c. What surfaces are touched often, such as doorknobs, light switches, equipment, and shared tools?

2. Implement measures to reduce the risk

a. Maintain a distance of 2 metres (6 feet) between workers and others wherever possible

b. Create pods of workers who work together exclusively to minimize the risk of broad transmission throughout the workplace

c. Where physical distance cannot be maintained consider the use of masks.

d. Provide adequate hand-washing facilities on site for all workers

e. Develop policies around when workers must wash their hands, including upon arriving for work, before and after breaks and before and after handling common tools and equipment.

f. Implement a cleaning protocol for all common areas and surfaces, including washrooms, equipment, tools, common tables, desks, light switches, and door handles. Ensure those engaged in cleaning have adequate training and materials.

g. Remove any unnecessary tools or equipment that may elevate the risk of transmission.

3. Develop policies to manage the workplace

a. Anyone who has had symptoms of COVID-19 in the last 10 days must self-isolate at home.

b. Anyone under the direction of the provincial health officer to self-isolate must follow those instructions

c. When workers or contractors are feeling ill at work they should immediately let their supervisor know and go home. If symptoms align with those of COVID-19 they should be tested and self-isolate until they are symptom free and have a negative test result.

1.6 Required safety meetings

1.6.1 New Worker Orientations

New workers are at a high risk for injuries. They need to know the safety policies and procedures and demonstrate that they understand how to protect themselves and others. All employees and dependent contractors operating under your company's safety plan must review the New Graph health and safety policies and safe work procedures on their first day before they start work or when returning to work after an absence of longer than 6 weeks. Template to be filled out is attached as Appendix 1 - New Worker Orientation (page 27).

1.6.2 Tailboards

Tailboard meetings are a way to reset at the start of new work tasks to put safety first as the top priority at all places of work. Our tailboard template is unique in that it contains documentation of numerous safety policy actions in one place. Tailboards include references to field safety plans and contain:

- Site Assessments, Hazard Identifications and Risk Assessments
- Worker Assessments
- Personal Protective Equipment Checklist/Inspections
- Machinery Inspection (Vehicle/Trailer/ATV)
- Emergency Contact List and Info
- Call In/Call Out Numbers for Check-ins
- Hazard Inspections
- First Aid Assessments

They are included in this plan as Appendix 2 - Tailboard Template (page 27).

1.7 First Aid equipment and procedures

A level 1 kit is kept under the seat of each work vehicle and our OHSP is also kept in the truck. The kit should be inspected for contents to see that it is complete. A weatherproof container is recommended for all items except the blankets. Below is an itemized list of what should be in the kit:

Quantity	Required Item
1	Blanket
24	14 cm x 19 cm wound cleansing towelettes, individually packaged
50	Sterile adhesive dressings, assorted sizes, individually packaged
10	10 cm x 10 cm sterile gauze dressings, individually packaged
4	10 cm x 16.5 cm sterile pressure dressings with crepe ties
2	7.5 cm x 4.5 m crepe roller bandages
2	7.5 cm conforming gauze bandages
1	2.5 cm x 4.5 m adhesive tape
2	Cotton triangular bandages, minimum length of base 1.25 m
2	Quick straps (a.k.a. fracture straps or zap straps)
1	Windlass style tourniquet
1	14 cm stainless steel bandage scissors or universal scissors
1	11.5 cm stainless steel sliver forceps
1	Pocket mask with a one-way valve and oxygen inlet
6	Pairs of medical gloves (preferably non-latex)
1	Waterproof waste bag
	First aid records

1.7.1 Worksite First Aid Requirements

To determine an adequate and appropriate level of first aid coverage, the first step is a first aid assessment. This requires a full review of the workplace. The assessment will help you determine the minimum level of first aid needed in your workplace. First aid levels are outlined in the OHS Regulation Schedule 3-A: Minimum Levels of First Aid.

Below are the steps for a first aid assessment. Tables of scenarios based on the number of people working and the assessed hazard rating are included in Appendix 3 - First Aid Requirements (page 30).

- Identify the number of workplaces.
- Identify your workplace hazard rating.
- Consider the surface travel time to a hospital.
- Determine the number of workers on a shift.
- Determine the required first aid services for your workplace.
- Review your assessment.

2 Plans and Assessments

2.1 Field Safety Plans

Field safety plans are written up before traveling to any job site. Information included in these plans include:

- Location and contact info of accommodations where employees are staying.
- Description of personal and company vehicles.
- Crew member contact details, including emergency contacts.
- Personal and crew equipment checklist.
- Location and contact info of nearest hospital.
- Check in and failed check in procedures.
- A brief description of the job, as well as map links and a list of possible locations where crew members will visit.

2.1.1 Check-in Procedures and Field Communications

Call, text or in reach emergency contact each morning to share the plan for the day (i.e. name of roads and sites). Agree on a regular daily check in time and report position/provide updates.

2.1.2 Procedures for Failed Check-In

If phone call or in reach check-in is not received by agreed upon time, send text to in reach units, call or text cell phones of field crew members. If no response please call accommodations, then personal emergency contacts to see if they have heard anything. Wait 1 hour and text in reach, text or call cell phones and personal emergency contacts and accommodations again. Repeat after 2 hours - if no response then notify the RCMP of a missing persons in field.

2.2 Hazard / close-call / incident reporting requirements and procedures

Incidents are situations in the workplace that resulted in or could have resulted in injuries, illnesses, or fatalities. Close calls are incidents that almost happened. These can be used to prevent incidents in the future. We have policies in place so that we can document and review close calls. Reporting templates are attached as Appendix 4 - Incidence/Close Call Template (page 35).

2.3 Emergency Response Plan (ERP) and Procedures

Remote Site Emergency Call-In Procedures:

- Dial RCMP
- Name:
- Location: (GPS, UTM Co-ordinates, Road Km)
- Phone #
- Nature Of Injury: (severity, what happened, and # of Victims)
- Environmental Conditions: (weather, slope, access conditions)
- Request what you are going to need: (SAR, PEP, Helicopter,)

2.3.1 Fire Response

- Regularly monitor the fire weather index using representative weather station and determine the appropriate Fire Danger Class for the area. For Danger Class Reports go to: http://bcwildfire.ca/Weather/Maps/danger_rating.html
- Stop operations and notify he manager and crew immediately upon observation of a fire.
- Manager should either act as the emergency response team leader or designate another crew member to assume the emergency response team leader role.
- Call Forest Fire Reporting : 1-800-663-5555 or * 5555 on the Cantel and Telus networks
- The individual reporting the fire shall remain available to communicate details of the fire suppression activity taken and what may be required.
- The remaining crew shall begin immediate action on the fire to their level of safety and competence provided it is determined by the emergency response team leader that the fire can be safely controlled by the crew.
- The person in charge of the crew during suppression operations will continue to supervise the efforts until relieved by licensee/contractor representative or BC Wildfire Management Branch personnel.

2.3.2 Landslide, Avalanche, and Natural Disaster Response

- Ensure all workers are trained and understand response procedures and this emergency response plan is available on site at all times.
- Notify supervisor and other workers. If safe to do so, assess situation to determine if activities must be shutdown.
- Take steps to control further environmental impacts.
- Supervisors must account for all workers before leaving the site. If a shutdown is required, park all equipment in an environmentally safe location (avoid riparian management areas, steep side slopes, steep road sections, areas with excessive soil moisture, and areas within reach of standing timber).
- Contact appropriate parties if significant environmental damage or damage to infrastructure requiring repair has occurred (MFLNRO, BCTS, MoTI, etc.).

2.3.3 Spill Response

Step 1. Ensure Safety

- Assess site hazards to ensure safe work procedures.
- Notify Site Supervisor and Environmental Monitor (EM).
- If unsure of the product, consult the MSDS sheets.
- Eliminate ignition sources if spilled material is flammable.
- Wear proper personal protective equipment (gloves) contained in the spill kit.

Step 2. Contain the spill

- Eliminate the source of the spill.
- Use contents of the provided spill kit(s) to stop the spread of the spill/leak. Absorbent socks can be used to surround the spill.

- **Remember: White = Fuels & Oils Only, Gray = Universal (Fuels, Oils and Chemicals such as antifreeze)**
- Divert spill away from ditches and watercourses.
- Once the spill is contained, attempt to soak it up using an absorbent pads.
- Place the absorbent pads and any contaminated soil in a container and dispose of it in accordance with the MSDS sheet and provincial regulations.

Step 3. Reporting Requirements

- All spills must be reported to the Site Supervisor and the EM. If the EM cannot be reached, notify the Provincial Emergency Program (PEP) at 1-800-663-3456 if the spill meets the thresholds detailed in the Spill Reporting Regulation of BC. A summary of the reporting thresholds for the most likely spilled materials is below.

Spill Reporting Thresholds Oil Fuel, Oil & Hydraulic fluid: Any quantity that enters or is likely to enter water >100L to land Antifreeze: Any quantity that enters or is likely to enter water >25L to land

2.3.4 Injury

Minor wounds, breaks, strains:

- Ensure site is safe, stabilize patient (provide first-aid), transport to closest Hospital, if necessary.
- Advise office and hospital when you are on route
- If accident is the result of a motor vehicle accident, please advise the RCMP at 250 353 2225

Serious injury:

- Ensure site is safe, then stabilize (provide first-aid) and/or prepare patient for transport.
- Activate SPOT messenger, or call 1 800 461 9911 (if using the satellite phone).
- Provide nature of injuries, location co-ordinates in UTM or longitude and latitude for landing site, and communication method to use on the way to the accident site.
- If air evacuation is required, you must advise the communication centre you've reached; if road evacuation is used, then advise if you will be meeting the ambulance en route.

2.3.5 Fatality

- Ensure site is safe
- Activate SPOT messenger, or call 1 800 461 9911 (if using the satellite phone)
- Contact Nelson WCB at 1 800 663 4962
- Do not disturb the site, cover the body, ribbon off the area, and block access if possible

2.4 Site and Worker Assessments

Conducting a systematic risk assessment will help identify the hazards that exist in the workplace, and how they may put workers at risk. To determine if we've done enough to protect our workers,

we use a rating system as part of our risk assessment. Risk is calculated by multiplying the likelihood by the severity.

Examples of risks/hazards found in and around job sites include, but are not limited to:

- Wildlife
- Swiftwater
- Vehicle traffic
- Slippery/uneven ground
- Exposure to heat or cold
- Machinery
- ATV (roll over, burns, collision)
- Chemicals
- Chainsaw/loppers/knives
- Electrofisher shocks
- Open water
- Overhead snags and sharp branches

2.5 Contractor Selection Policy

At New Graph we are responsible to ensure that the contractors we hire to complete and assist on projects are compliant with the workers compensation act and have a record that illustrates they have a culture of safety. For forestry related work, contractors are required to be part of Safe Certified companies. We have a checklist that we require our contractors to complete to ensure that they meet our requirements. Our policy is to always get a clearance letter before and after we receive services from a contractor to confirm whether they registered with worksafe BC and are

paying premiums. The contractor selection and safety checklist forms are included as Appendix 5 - Contractor Selection and Safety Checklist (page 39).

Of note, contractors are considered our workers if they do not operate as an independent business and are either not eligible for WorkSafeBC coverage or decline to purchase WorkSafeBC's optional coverage. Below are examples of situations where a contractor would likely be our worker:

- The contractor supplies only labour
- The contractor supplies labour and minor materials
- The contractor supplies labour and a piece of major equipment but is not registered with WorkSafeBC

2.6 Personal Protective Equipment (PPE) policy

All employees will be provided the required PPE when they are hired, and instructed on its proper use and care. Employees are responsible for keeping PPE in good working condition and notifying their supervisor if any PPE no longer meets safe standards.

All PPE must meet regulatory and Canadian Standards Association standards.

The following provides a *guideline* to the requirements and use of PPE. A full listing of requirements can be found in the Occupational Health and Safety Regulation at https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-08-personal-protective-clothing-and-equipment

PPE	Requirements	Used in these situations
High visibility clothing (vest)	• The apparel must be a color that contrasts with the environment.	• When worker is outside of the vehicle. • On all construction sites
Limb and body protection	• Must be free of holes and, in the case of hand protection, made of a material that provides a good grip.	• When the worker is exposed to a substance or condition that is likely to puncture, abrade or affect the skin – or be absorbed through the skin.
Warm dry clothing		• All field work situations. Particularly in night work and during seasons of typically variable and cold wet weather.

PPE	Requirements	Used in these situations
Wading Belt		• Must be worn around waste snugly in conjunction with waders to ensure that waders do not fill with water in the event of a fall in the water.
Wading Boots	• Soft rubber or felt sole footwear specifically designed for stream work	• When stream work is required.
Polarized glasses		• Must be worn while working in and around water
Throw bag and releasable safety rope	• Must be 15 meters of line.	• When worker is working in/ or around swift water
Personal Flotation Device	• Must be Canadian General Standards Approved • Must be stored in a dry area. • Avoid exposure to sunlight.	• When worker is working in/ or around deep open water
Hard hats	• High- visibility, hardhat. • Cleaned regularly and stored away from grease and tools.	• Must be worn in any work area where there is a danger of head injury from falling, flying or thrown objects, or other harmful contacts. • Must be worn on all construction based job sites.
Helmets	• Must be DOT approved	

PPE	Requirements	Used in these situations
• Must be free of cracks, dents or any other damage.	• Must be worn when operating ATV/ snowmobile.	
Eye and face protection	• Safety eyewear must fit properly and include side shields when necessary for worker safety.	• Safety eyewear must be worn when working in conditions that are likely to injure or irritate the eyes. • Face protectors must also be used if there is a risk of face injury such as when operating a chain or brush saw.
Safety footwear	• Must be of a design, construction and material appropriate to the protection required for the work environment	• Appropriate footwear must consider the following factors: slipping, uneven terrain, abrasion, ankle protection and foot support, crushing potential, temperature extremes, corrosive substances, puncture hazards, electrical shock, and any other recognizable hazard. • Toe and metatarsal protection, puncture resistance, and/or dielectric protection must be used where appropriate. • Caulked or other equally effective footwear must be worn by workers who are required to walk on logs, piles, pilings or other round timbers.
Hearing protection	• WorkSafeBC's regulations regarding noise exposure are: ◦ 85dBA Lex daily noise exposure level	

PPE	Requirements	Used in these situations
◦ 140 DBC peak sound level	• If those levels cannot be practicably met, the employer must: ◦ Reduce levels as low as possible ◦ Provide to workers hearing protection that meets CSA standards, and ensure it is worn effectively in noise hazard areas	
Bear Spray / Bangers	• Always worn in remote locations • Inspected regularly and stored in a safe, dry place.	• Must be readily available in case of any bear sighting. • Must be carried for all remote worksites or worksites where there is potential bear activity. • Ensure equipment has current use by date attached.

2.7 WHMIS orientation and location of the Material Safety Data Sheets (MSDS)

2.8 Records of Training

A training log of all employee training/certifications can be found in the data folder here.

2.9 Progressive discipline policy

Actions and behaviors that create or facilitate unsafe working environments and elevate the risk of injury to company representatives, contractors and the public are unacceptable. To ensure that

these actions and behaviors do not persist once identified, the following progressive discipline policy has been implemented.

1. Verbal Warning
2. Documented Warning
3. Letter of Reprimand
4. Discharge

3 Safe Work Procedures and Practices

3.1 Driving

3.1.1 Procedures and Practices

- Conduct a “pre-trip” vehicle check. Use a Vehicle Pre-trip Inspection and Mileage Log to track activity.Report deficiencies and do not use if equipment is in unsafe condition.
- Make notes of required maintenance in the mileage logbook when it is required and include “checking the logbook for required repairs” at the time of each inspection.
- Drive defensively at all times.
- Ensure all vehicle occupants are wearing seatbelts. You are responsible for your passengers.
- Do not exceed posted speed limits.
- On resource roads do not exceed 80kph or posted speed limits.
- Drive safely and drive to the existing road conditions. Lower speed as required. Be aware of:
    - Visibility reduced by dust, fog, rain and snow;
    - Narrow roads with over width vehicles;
    - Steep favorable and adverse gradients;
    - Slippery and variable road surface conditions due to loose gravel, snow, ice or mud;
    - Other users.
- Use vehicle for intended use only (purpose and weight limitations).
- Drive with vehicle lights on at all times.
- Secure all heavy or sharp objects in the cab of the vehicle.
- Respect that loaded logging trucks have the right of way on single lane roads.
- Tailgating is driving too close behind other vehicles. It is extremely cangerous as it can lead to accidents if they vehicle in front of you brakes suddently or is in a collision/crash you can smash into them. Leave a sufficient distance in front of the vehicle in front of you, even more so for logging trucks. A good rule of thumb is to leave 3-4 seconds of time between when the vehicle in front of you passes a specific location and when you pass it.
- Pass trucks or equipment only after you receive a clearly visible and/or audible signal from the operator.
- Never chase a runaway vehicle.

- Stay on your side of the road.

  COVID 19 (COVID)

  - Self-assess daily for COVID symptoms and self-isolate and test if you have symptoms.
  - When possible, travel in separate vehicles. When a crew is required to travel together, sit in seats as far from eachother as possible, wear masks and when possible leave the windows open for good ventilation.
  - All vehicles need to have paper towel, min 70% alcohol hand sanitizer and non-medical grade masks. Ensure this is present before leaving.
  - When getting in vehicle wipe down all initial touch points with min 70% alcohol and paper towel (ex. Vehicle door, radio, steering wheel, shifter, seat belt). Sanitize all surfaces of both hands.
  - After opening vehicle door at all stops and worksites use hand sanitizer on surfaces of both hands. Put on non-medical mask if entering building (ex. Gas station, restaurants) or working with others where you cannot keep min 2m distance. Upon exiting vehicle close door with elbow.

3.1.2 Radio Use

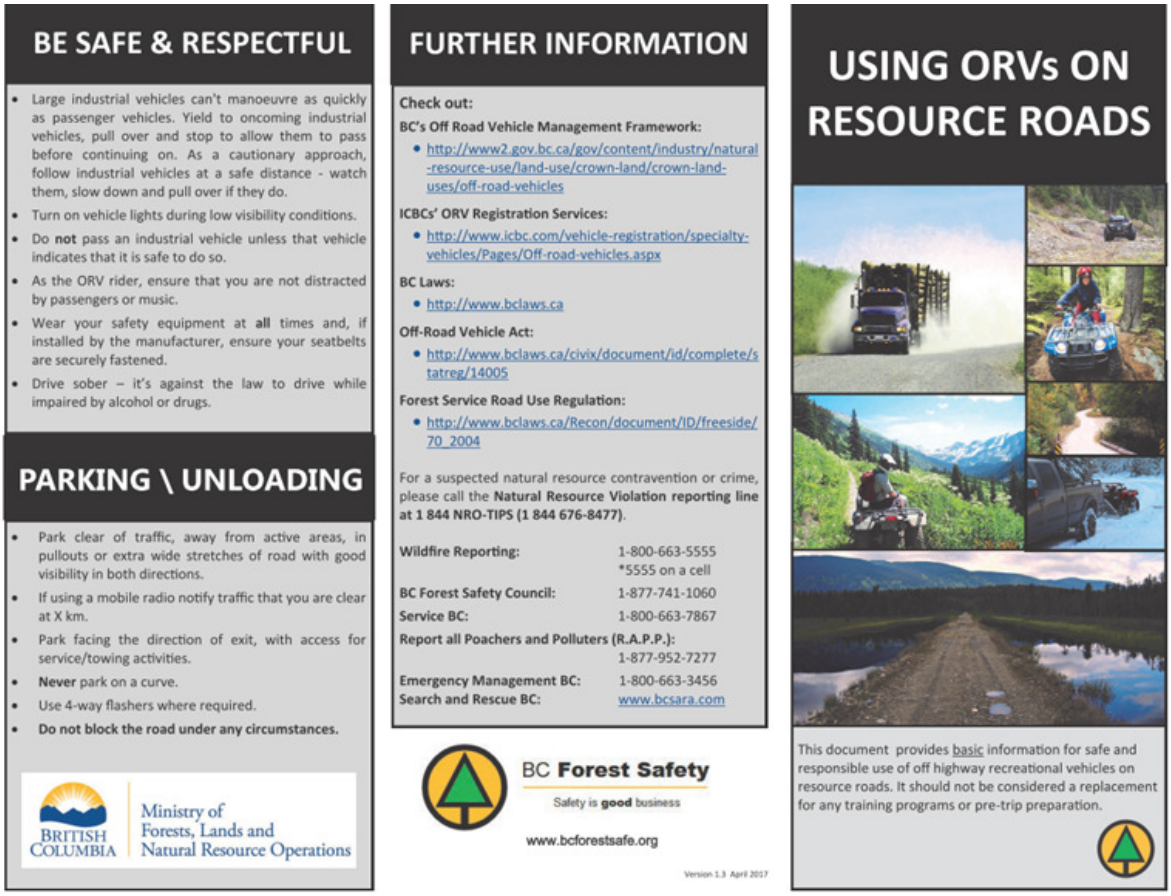
- Complete radio check and ensure correct frequency prior to entering radio controlled area.
- Do not drive by the radio. Expect oncoming traffic at all times.
- Call your position according to the local radio protocol and signage.
- Notify other radio equipped vehicles of oncoming non-radio equipped traffic.
- Do not use road radio channels for conversations, use only for road traffic protocols.
- Other than traffic control, pull over and safely park when talking on the radio for an extended period of time.

3.1.3 Parking and Key Management

- When working in the field, it is important to manage your keys. Always carry a spare key and keep it hidden somewhere on the vehicle that can be accessed if keys are lost. As a good practice and particularly important if you do not have a spare key - hide primary keys somewhere on your vehicle. Choose a location that is hard to see but easy to reach (ex: in gas cap or under bumper). Notify your co workers where they are in case of emergency.
- Park clear of traffic, away from active areas in pullouts or extra wide straight sections of road.
- Park facing the direction of exit with access for service/towing activities.

- Ensure the parking brake is on and the transmission is in 1st gear or park.
- On steep grades, use wheel chocks and always turn the wheels towards the nearest ditch.
- Never park on a curve especially on the outside curve of a road.
- When turning around, back into the cut bank of the road and not towards the outside bank.
- Use flares where required.

3.2 All-terrain vehicles



3.3 Electrofishing

3.3.1 Preparatory Procedures

1. A crew leader must be designated for all backpack electrofishing activities.
2. It is the crew leader's responsibility to ensure that all equipment is in "safe working order".
3. An emergency response plan must be prepared and reviewed with all crew members.

4. The crew leader must ensure all crew members have received instruction in the fundamentals of electrofishing safety.

5. The crew leader and at least one additional crew member must have up-to-date CPR and First Aid training.

6. Each electrofishing site must be visually inspected for hazards such as deep holes, submerged logs, etc. before commencing electrofishing operations.

7. In order to aid in identifying underwater hazards, all crew members must be equipped with polarized sunglasses. Glasses also protect against eye injury caused by sticks and branches. Wide brimmed hats or peaked caps are also beneficial in increasing the effectiveness of polarized glasses.

8. All crew members must be equipped with long armed gloves that are non-conductive, waterproof and inspected to be free of leaks. Gloves must be worn at all times during electrofishing operations.

9. All crew members must be equipped with chest waders that are non-conductive, waterproof and inspected to be free of leaks. Chest waders must be worn at all times during electrofishing operations by team members entering the water. Wading belts are to be worn at all times.

10. All crew members must agree on a system of communication during electrofishing operations.

11. Backpack electrofishing units must be turned off and the battery disconnected before making any connections or part replacements. Start-up Procedures

12. All crew members must be notified and acknowledge their preparedness prior to the commencement of electrofishing operations. The unit operator must make sure that personnel are clear of the anode before turning on the power. Hand signals are a useful way of conveying these messages.

13. Check operation of all switches and gauges. This should include high voltage check, anode switch, power switch and mercury tilt switch, audible tone generator and light. Set controls to appropriate levels. The minimum voltage possible to obtain the desired results should be used to avoid excessive harm to the biota and to minimize the effects of accidental shock.

3.3.2 Operational Procedures

14. Operate slowly and carefully. Footing in most streams is poor and most falls occur when crew members are hurrying. Operations should cease when fatigue sets in.

15. Team members must not place their hand(s) into the water when the power is turned on.

16. Electrofishing units must be shut off prior to entering or leaving the water and the battery terminals disconnected (or generator shut off) when not in use or when transporting the unit.

17. Life jackets or Personal Floatation Devices (PFDs) must be worn where the crew leader considers the water is of sufficient depth or velocity for a life jacket or PFD to be effective as protection from risk of drowning. Life jackets and PFDs must be approved by Transport Canada or Canadian Coast Guard. Electrofishing should not be carried out where water depth is greater than waist deep.

18. A crew member must immediately leave the water if wetness is detected in gloves or waders (by leaks, rain or perspiration) and obtain dry equipment before returning. Mild dampness from perspiration or humidity is considered normal.

19. Electrofishing operations must cease during inclement weather. (e.g. periods of any lightning or moderate rain).

COVID 19

- As electrofishing often requires the “fisher” and “netter” to be within 2m of eachother masks are required to be worn by both crew members.
- Wear disposable gloves when assembling equipment or wipe down all touch points after assembly.

3.4 Culvert assessments and habitat confirmation assessments

See driving procedures including radio use and parking.

- Sometime parking on the shoulder of resource roads is the only practical way to assess a site. When doing so place a traffic cone 2m behind the back left wheel to alert oncoming traffic.
- Wear waders and wading boots or a non-slip rubber boot when working in the stream. Carefully assess your footing and be ready for slippery surfaces.
- Use 2 walking poles when conducting in stream surveys. Always maintain 3 points of contact with poles and your feet. This allows for much greater stability and avoids the risk of injury. As the in stream substrate typically consists of cobbles and boulders, it can be very painful when falling. Be cautious of foot placement to lower risk of foot entrapment. Poles are often used in photos to have a frame of reference for measurements of stream characteristics. One pole can be used for scale, while the other one can remain in hand as a stabilizer.
- Carry bear spray with you at all times when in the field. You never know when you’ll need to use it.
- Always carry personal first aid kit, water, extra clothes, inreach satellite communicator and food (ex. Power bar) in your vest in case of an emergency.
- High visibility field vest should be worn to avoid being mistaken for an animal by hunters.
- Navigating to sites often requires the use of handheld devices such as phones, two-way radios or GPS which should either be used by a non-driving crew member or mounted on the windshield where they can be viewed without distracting the driver.

- Touching base with the call in person throughout the day is essential so that your last known location is known and to minimize the potential for false alarms should you not check in on time at the end of the day. Inreaches should be tested between crew members and between crew members and check in people before going in the field.

3.5 Working Alone

Working alone means working in circumstances where assistance would not be readily available to the worker in case of an emergency. There can be circumstances in the field where the worker will be conducting a survey alone. The lone worker must abide by the following procedures:

- Designate a contact person to check in with on a pre planned schedule. Arrange a meet up time and place before getting separated.
- The worker must carry a functioning communication device such as a cell phone, two-way radio, and a inreach satellite communicator. Carrying all three is highly recommended.
- Carry bear spray. Make a lot of noise periodically to alert bears in the area of your presence. Optionally, it can be effective to have a bluetooth speaker to play music.
- If the lone worker fails to check in, then the contact person must initiate search procedures. See Procedures for Failed Check-In section of Field Safety Plan.

3.6 Wildlife Encounters

3.6.1 Bears

Situation	Recommended actions
Bear does not know you are there	Move away undetected. Go back the way you came or take large detour around. If you must go ahead do so slowly and cautiously. DO NOT RUN Keep your eye on the bear. Watch for changes in behavior. Be careful not to crowd or surprise bear (especially Grizzlies). Do not shout if it is unaware of your presence.
Bear becomes aware of you	Calmly and from as far away as possible identify yourself as human. Talk to the bear in a low, respectful voice. Wave your arms slowly. Increase the distance between you and the bear.

Situation	Recommended actions
If possible, move upwind to give the bear your scent. When bear is aware and unconcerned take the opportunity to leave. Do not run.	
If you hear bear vocalizations or see young bears in area	Be extremely cautious and leave the area the way you came.
If bear approaches you	Stop, stay calm, and assess the situation: is bear acting defensively (grunting, or another way? Don't run. Group together if possible. Prepare deterrent (mace). Determine if bear is **defensive or aggressive.**
Bear approaching in a defensive (stressed) manner	**Defensive bears are threatened or may be protecting food. They show stressed behaviour such as rapid huffing, salivating, roaring, paw slapping, guttural noises, open mouthed jawing and charging.** When bear approaches or charges stand your ground (physical contact is rare). Most charges stop short. Appear non-threatening. Talk to bear in calm voice and let it know you mean it no harm. Don't shout or throw things acting defensively. Try to increase distance between you and the bear (keep your eye on it). Do not run. Use deterrent only as last defense.
In the case of a defensive attack	If bear physically contacts you in a defensive attack play dead: fall on ground on your front, protect your neck. If rolled over continue to roll over to face. Stay on ground till bear leaves. If attach is prolonged it is no longer defensive.
Bear approaching in **non-defensive** manner	**Non defensive bears show little stress. They look interested in you and intent on approaching you. Watch towards you**

Situation	Recommended actions
confidently looking towards you intermittently. They seem intent on attack. If approached move away from bears path or trail. If bear is intent on you stand your ground. **Your response needs to be assertive.** Act aggressively: shout at bear, stare it in the eye, stamp feet, stand on stump or log, threaten bear with stick or log. If attacked use deterrent, fight with any weapon available with all your strength. Focus attack on bear's face.	

Staying safe in bear country video: https://www.youtube.com/watch?v=s-zkGuh42l4&ab_channel=bearbiology

3.6.2 Cougars

- Make a lot of noise when working and walking
- Avoid cougar kills. Cougars cover their kills with dirt and leaves and return later. Be aware for circling birds and other scavengers; these could indicate there is a kill site nearby.
- **If you encounter a cougar:**
  - Don't run, this might trigger a pursuit
  - Don't turn your back, always keep the cougar in front of you
- **If the cougar shows interest in you** (staring, crouching, creeping, tail twitching):
  - Make eye contact
  - Make yourself look big
  - Show your teeth, pretend to be a predator
  - Make loud noises
  - Arm yourself with anything you can find
- **If the cougar attacks:**
  - Fight back, convince the cougar you are the predator and not the prey
  - Yell or make loud, intimidating noises
  - Focus your attacks on the cougar's nose, face, and eyes

3.6.3 Moose

A moose will charge to ward off a potential threat. Assure the moose that you are not a threat.

- **Signs of an aggressive moose:**
  - Walking in your direction
  - Stomping its feet
  - Peeling its ears back
  - Grunting
  - Throwing its head back and forth
- **How to prevent and survive a moose attack:**
  - Back away with palms facing the moose
  - Speak softly and reassuringly to it
  - If the moose charges then get behind a large tree or rock, most moose charges are bluffs
  - If the moose attacks you then fake death by curling up in a ball, protect your neck and back

3.7 Remote Working

Approximately 75% of the work done at New Graph Environment is remote from the employee's home. Safe work practices are still important when working remotely.

3.7.1 Ergonomics

Ergonomics are an important part to any home office. Your home work space should meet basic ergonomic requirements in order to decrease risk of long term injuries. Listed below are a few guidelines:

- It starts with a good chair. Ensure your chair is properly adjusted so that your wrists are straight, with hands below or at elbow level, knees are level with hips and thighs parallel to the floor, feet are flat on the ground, and the top of your computer display is positioned at or just below eye level. Get a chair with proper lumbar support.
- Invest in a good mouse and keyboard that offer good wrist support and comfort.
- Buy a proper desk that has enough room for all your equipment and is of appropriate height. Adjustable desks are a good option since you can switch between sitting and standing positions.
- Do not sit in one place all day long. Make sure you get up and walk around and/or stretch throughout the day to relieve muscle and joint pain.

3.7.2 Mental and Physical Health

When working remotely, it is important to maintain your mental and physical health. Listed below are a few ways to reduce stress and improve your mental and physical health:

- Stick to a regular work routine and schedule every day, and switch off on your down time.
- Take a break every now and then to get up and walk around.

- If a task you're working on is causing you too much stress then don't be afraid to delegate or ask for help, avoid burnout and overworking yourself.
- Stick to a good work life balance, make time for socialising and enjoying your favorite hobbies/physical activities.
- Sun exposure is limited when working inside and it can therefore be hard to get your daily Vitamin D requirements, consider taking a supplement.
- Seasonal affective disorder can affect everyone and can cause a decrease in energy levels and change in mood in the winter time, ensure you go outside everyday and engage in regular physical activity to reduce stress levels.
- When leaving the house to go to a work related meeting be aware of road conditions when driving, even when walking (steer clear of ice to avoid nasty falls).

Appendices

Appendix 1 - New Worker Orientation

Appendix 2 - Tailboard Template

Project: Location : Date:

Name	Crew Leader/Member	Signature
	Leader Member	
	Leader Member	
	Leader Member	
	Leader Member	

Pre-existing Health Conditions?

Description of work: (ex. Culvert assessments, electrofishing, water sampling, redd surveys, RPAS surveys etc.)

Site Conditions:

Clear		Dry		Hot		Cloudy/Broken	
Raining		Wet		Warm		Foggy	
Snowing		Muddy		Cold		Icy/Snow Covered	

Site Risks and Hazards. Job risks:

Wildlife		Slippery and/or uneven ground		Chainsaw/knife/loppers (cuts)	
Swiftwater		Exposure (heat/cold)		Electric Shock (electrofisher)	
Remote worksite		Machinery		Open water	
Traffic		ATV/Sled (roll over/burns/collision)		Overhead Snags	
Bush roads		Chemicals		Sharp shrubs (eye injury)	
Dogs		Helicopters (rotors, lines, stranding)		Other _____	

Plans Reviewed:

Emergency Response Plan		Field Safety Plan (Call in / Call out Procedures)	
Safe Work Procedures		Roles and Responsibilities	

Personal Protective Equipment Checklist/Inspection:

Hi-Vis Vest		**Protective footwear (assess condition)**		**Throw Bag**	
Cell phones / radio / spot		Hard Hat		PFD	
Waders / **Wading Belt**		Water/ Food supplies		Dry Suit	
Bear Spray/Bangers		Rainwear/ Weather Wear (extra coat)		Linesman Gloves	
Level 1/ Personal FA Kit		Other_____		Whistle	

Machinery Inspection (Vehicle/Trailer/ATV) Vehicle ID_____

Obvious damage/leaks			**Horn**		
Tires			Brakes		
Headlights / tail lights / Signals			Parking Brake		
Fuel			Uneven tire wear/rough steering?		
Oil Level			Safety/Emergency information		
Radiator fluid			Spare Tire/ Jack		
Windshield fluid			Suspension/Steering		
okay	☐	X	needs attention	☐	X

Housekeeping for Slips, Trips and Fall Prevention:

Slippery/uneven ground		**Spills**		**Unsecured mats, tiles, carpets**	
Loose debris		Cables/cords		Smoke/Steam/Fog view obstruction	
Poor lighting		Barriers in place		Good footwear	

Types of injuries that could occur:

Sprains/breaks/bruises		**Crush injuries**		**Electrocution**	
Cuts/lacerations		Head injuries		Traffic accident related	
Drowning		Exposure		Repetitive Strain (eg.tendonitis)	

Barriers to first aid being provided to injured worker:

Unsafe Accident Scene		**Victim/ Attendant Panic and/or Shock**	
Remote worksite (distance to Hospital/Vehicle)		Time to get Level 1 kit from vehicle if required	
Slippery / Steep and/or			

Unsafe Accident Scene		Victim/ Attendant Panic and/or Shock	
uneven ground		Other _____	

First Aid Assessment (Check one) – See Appendix 8 of H&S Plan for details/lower requirement scenarios

Scenario	Requirement
<6 – 30 workers and > 20 minutes from hospital and “low” risk of injury	Level 1 Certificate and Level 1 Kit
6 – 15 workers and > 20 minutes from hospital and “moderate” risk of injury	Level 1 Certificate, Level 1 Kit, Transportation endorsement and ETV equipment
6 – 10 workers and > 20 minutes from hospital and “high” risk of injury	Level 1 Certificate, Level 1 Kit, Transportation endorsement and ETV equipment
11 – 30 workers and > 20 minutes from hospital and “high” risk of injury	Level 3 Certificate, Level 3 Kit, dressing station and ETV

Discuss incidents and close calls in past similar work (reasons for incident/close call and corrective actions taken/to be taken to avoid similar situations).

Discuss Relevant Industry Alerts:

Overhead hazards (snags/branches)		Secure contents in vehicles		Bears	
Winter Driving Preparation		Alert while Driving		Vehicle Maintenance	
Unstable machinery		Floods and Landslides		Devils Club in eyes	

Additional Safety Comments:

Worker Assessment Worker: _____Assessed by: _____

Can identify worksite hazards		Wears hard hat / protection	
Is alert and focused on job		Uses required hearing protection	
Demonstrates safe use of tools & equip.		Wears high visibility / protective clothing	
Demonstrates proper use of seat belt		Wears appropriate footwear for job	
Has required license / certificate(s)		Wears wading belt / bear spray	
Worker is Competent			

Feedback: _____

_____

Signatures: Worker: _____Assessed by: _____

Call In/Call out Numbers

Crew Member		Personal Emergency Contact	Personal Emergency Contact #
Allan Irvine	250 777 1518	Tara Stark	250 352 5311 Cell: 250 505 9489
Inreach text (al)	226 241 6177 allanirvine75@ inreach.garmin.com		

Emergency Contact Info:

	Kaslo	Grand Forks	Nelson	Fernie	Creston	Mackenzie
RCMP Search&Rescue	911	911	911	911	911	911
Hospital	250 353 2225	250 443-2100	250 352-3111	250 423 4453	250 428 2286	2509973263
Poison Control	1 800 567 8911					

250 565-2000 Prince George Hospital

Report All Incidents and Close Calls on Incident/Close Call Reporting Form In Safety Binders in Vehicles

Appendix 3 - First Aid Requirements

Table 1: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a low risk of injury and that is more than 20 minutes surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
1	1	Personal first aid kit		
2	2-5	Basic first aid kit		
3	6-30	Level 1 first aid kit	Level 1 certificate	

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
4	31-50	Level 1 first aid kit • ETV equipment	Level 1 c ertificate with Tr an sportation E ndorsement	
5	51-75	Level 3 first aid kit • Dressing station ETV equipment	Level 3 c ertificate	
6	76 or more	Level 3 first aid kit • First aid room ETV equipment	Level 3 c ertificate	ETV

Table 2: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a low risk of injury and that is 20 minutes or less surface travel time away from a hospital.

It em	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
1	1			
2	2-10	Basic first aid kit		
3	11-50	Level 1 first aid kit	Level 1 c ertificate	
4	51-100	Level 2 first aid kit • Dressing		

It em	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
station	*Level 2 c ertificate			
5	101 or more	Level 2 first aid kit • First aid room	*Level 2 c ertificate	

Table 3: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a moderate risk of injury and that is more than 20 minutes surface travel time away from a hospital.

It em	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
1	1	Personal first aid kit		
2	2-5	Level 1 first aid kit	Level 1 c ertificate	
3	6-15	Level 1 first aid kit • ETV equipment	Level 1 c ertificate with Tr an sportation E ndorsement	
4	16-50	Level 3 first aid kit • Dressing station • ETV equipment	Level 3 c ertificate	ETV

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
• First aid room • ETV equipment	Level 3 certificate	ETV		
6	101-300	Level 3 first aid kit • First aid room • Industrial ambulance equipment	Level 3 certificate	Industrial ambulance
7	301 or more	Level 3 first aid kit • First aid room • Industrial ambulance equipment	2 attendants, each with Level 3 certificates	Industrial ambulance

Table 4: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a moderate risk of injury and that is 20 minutes or less surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
1	1	Personal first aid kit		
2	2-5	Basic first aid kit		

It em	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
4	26-75	Level 2 first aid kit • Dressing station	*Level 2 c ertificate	
5	76 or more	Level 2 first aid kit • First aid room	*Level 2 c ertificate	

Table 5: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a high risk of injury and that is more than 20 minutes surface travel time away from a hospital.

It em	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
1	1	Personal first aid kit		
2	2-5	Level 1 first aid kit	Level 1 c ertificate	
3	6-10	Level 1 first aid kit • ETV equipment	Level 1 c ertificate with Tr an sportation E ndorsement	ETV
4	11-30	Level 3 first aid kit • Dressing station	Level 3 c ertificate	ETV

It em	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid c ertificate for a ttendant	Column 4 Transp ortation
• First aid room • ETV equipment	Level 3 c ertificate	ETV		
6	51-200	Level 3 first aid kit • First aid room • Industrial ambulance equipment	Level 3 c ertificate	Industrial ambulance
7	201 or more	Level 3 first aid kit • First aid room • Industrial ambulance equipment	2 a ttendants, each with Level 3 ce rtificates	Industrial ambulance

Appendix 4 - Incidence/Close Call Template

Date of Incident: Company:

Date Reported: Location:

Reported By: Type of Job:

Describe incident / close call (draw diagram on other side if helpful)	• ☑ • •	Category
Notes:		close call
		bodily injury/illness
Notes:		lost time
		dangerous goods spill
Notes:		fire
		vehicle incident / damage
Notes:		ATV incident / damage
		other equipment damage
Notes:		other (describe)
		other (describe)
Names/contact info of any individual or witnesses involved in incident / close call:		

Describe incident / close call (draw diagram on other side if helpful)	• ☑ • •	Category

If first aid was rendered, name of attendant:

Describe immediate and root cause of incident / close call:				
Notes	• ☑ • •	**Immediate cause(s)**	• ☑ • •	**Root cause(s)**
Notes:		failure to follow safe work procedures		inadequate work planning, engineering, design
Notes:		improper use of equipmen t/tools/lockout		inadequate polices, procedures
Notes:		failure to warn or instruct		inadequate communications
Notes:		body motions – pushing, pulling repetition		inadequate supervision
Notes:		improper use of PPE		inadequate risk/hazard assessment

Describe immediate and root cause of incident / close call:		
Notes:	inadequate awareness of surroundings	mental, physical stress/fatigue
Notes:	poor housekeeping	inadequate main tenance/inspections
Notes:	worksite conditions – weather congestion, layout, (circle)	inadequate physical abilities
Notes:	other	other

Describe corrective action(s) to be undertaken:	
Person responsible for corrective action:	
Date action to be completed by:	
Person responsible to sign here when completed:	
Date when action was completed:	

Report and actions reviewed by

SEND A COPY OF THIS REPORT TO THE PARTY YOU REPORT TO.

Appendix 5 - Contractor Selection and Safety Checklist

Contractor Selection Form

Contractor Safety Checklist

To be completed at the commencement of activities at the start of the year and then on a quarterly basis thereafter.

Contractor:		**Contractor Contact:**	
Location:		**Date:**	

Item		• *Yes**	No	Comments
Will a qualified supervisor who meets the criteria below be on site at all times? ***Qualified Supervision*** means a person who instructs, directs and controls workers in the performance of their duties and who is knowledgeable of the work, the hazards involved and the means to control the hazards, by reason of education, training, experience or a combination thereof.				
How is your organization identifying and communicating hazards in the				

Item		• *Yes**	No	Comments
workplace? documentation required				
What does your organization pre-work planning process look like and what does your ongoing block hazard assessment process look like? documentation required				
When do you intend to start operations in the following blocks?				
What does your pre-work meeting look like, does it include all subs – are potential hazards identified prior to activities occurring?				
What does the firm's orientation process look like for new workers/ contractors / s ubcontractors including service providers arriving at the worksite?				
Defined Area Safety Orientation reviewed with all contractors / s ubcontractors at the Defined Workplace prior to commencing work activities.				
Do all contractors / su bcontractors, in the workplace provide a list of their				

Item		• *Yes**	No	Comments
designated supervisors? documentation				
How does the operation coordinate the activities of all permitted persons including contractors / s ubcontractors at the workplace to ensure the Health and Safety of all workers is maintained?				
What are your procedures in the workplace to ensure safe access? documentation				
What is the process for assessing the workplace first aid needs? documentation				
How are you conducting regular inspections of the Workplace, work methods & practices, including worker inspections?				
OHS site safety plan is in place and available to all persons. contractors and s ubcontractors at the worksite.				
What is your safety meeting process? Are all persons / contractors / s				

Item		• *Yes**	No	Comments
ubcontractors at the workplace included in the your OHS program and safety meetings?				
Are all safety incidents reported and investigated?				
What does your hazard reporting and follow up process look like?				
What does your ERP look like and how was it communicated when it was last tested?				
Do you have safe work procedures for all activities being carried out?				
Signed off on behalf of Company:				
Signed off by the Contractor:				
Dated:				

SEND A COPY OF THIS REPORT TO THE PARTY YOU REPORT TO.

References

Session Info

```
R version 4.2.2 (2022-10-31)
Platform: aarch64-apple-darwin20 (64-bit)
Running under: , RStudio 2023.3.0.386

Locale: en_US.UTF-8 / en_US.UTF-8 / en_US.UTF-8 / C / en_US.UTF-8 /
en_US.UTF-8

Package version:
  analogsea_1.0.6          AsioHeaders_1.22.1.2     askpass_1.1
assertthat_0.2.1         backports_1.4.1          base64enc_0.1-3
  bcdata_0.4.0             BH_1.81.0.1              bibtex_0.5.1
bit_4.0.5                bit64_4.0.5              bitops_1.0-7
  blob_1.2.3               bookdown_0.32            boot_1.3.28.1
broom_1.0.3              bslib_0.4.2              cachem_1.0.8
  callr_3.7.3              cellranger_1.1.0         chk_0.8.1.9002
citr_0.3.2               class_7.3-21             classInt_0.4-8
  cli_3.6.1                clipr_0.8.0              codetools_0.2-19
colorspace_2.1-0         commonmark_1.8.1         compiler_4.2.2
  conflicted_1.2.0         cpp11_0.4.3              crayon_1.5.2
crosstalk_1.2.0          crul_1.3                 curl_5.0.0
  data.table_1.14.8        datapasta_3.1.0          DBI_1.1.3
dbplyr_2.3.0             digest_0.6.31            doParallel_1.0.17
  dplyr_1.1.0              dtplyr_1.3.0             e1071_1.7-13
elevatr_0.4.2            ellipsis_0.3.2           english_1.2-6
  evaluate_0.20            exifr_0.3.2              fansi_1.0.4
farver_2.1.1             fasstr_0.5.0             fastmap_1.1.1
  fishbc_0.2.1.9000        fitdistrplus_1.1.8       fontawesome_0.5.1
forcats_1.0.0            foreach_1.5.2            foreign_0.8-84
  fs_1.6.2                 furrr_0.3.1              future_1.31.0
fwapgr_0.1.0.9013        gargle_1.3.0             generics_0.1.3
  geojson_0.3.4            geojsonio_0.10.0         geojsonsf_2.0.3
geometries_0.2.1         ggdark_0.2.1             ggmap_3.0.1.900
  ggplot2_3.4.1            globals_0.16.2           glue_1.6.2
googledrive_2.0.0        googlePolylines_0.8.2    googlesheets4_1.0.1
  googleway_2.7.6          graphics_4.2.2           grDevices_4.2.2
grid_4.2.2               gridExtra_2.3            gtable_0.3.1
  haven_2.5.1              highr_0.10               hms_1.1.3
htmltools_0.5.5          htmlwidgets_1.6.1        httpcode_0.3.0
  httpuv_1.6.9             httr_1.4.5               ids_1.0.1
isoband_0.2.7            iterators_1.0.14         janitor_2.2.0
  jpeg_0.1-10              jqr_1.2.3                jquerylib_0.1.4
jsonify_1.2.2            jsonlite_1.8.4           kableExtra_1.3.4
  Kendall_2.2.1            KernSmooth_2.23-20       knitr_1.42
```

```
lazyeval_0.2.2           leafem_0.2.0             leaflet_2.1.1
leaflet.extras_1.0.0     leaflet.providers_1.9.0  lifecycle_1.0.3
  listenv_0.9.0            lubridate_1.9.2          magick_2.7.3
magrittr_2.0.3           maptools_1.1-6           markdown_1.5
  MASS_7.3.58.2            Matrix_1.5.3             memoise_2.0.1
methods_4.2.2            mgcv_1.8.41              mime_0.12
  miniUI_0.1.1.1           modelr_0.1.10            munsell_0.5.0
nabor_0.5.0              nlme_3.1.162             openssl_2.0.6
  openxlsx_4.2.5.2         pacman_0.5.1             pagedown_0.20.1
parallel_4.2.2           parallelly_1.34.0        pdftools_3.3.3
  PearsonDS_1.2.3          pgfeatureserv_0.0.0.9003 pillar_1.9.0
pkgconfig_2.0.3          plogr_0.2.0              plyr_1.8.8
  png_0.1-8                poisspatial_0.1.0.9000
poisutils_0.0.0.9010     prettyunits_1.1.1        processx_3.8.1
progress_1.2.2
  progressr_0.13.0         promises_1.2.0.1         protolite_2.2.0
proxy_0.4-27             ps_1.7.5                 purrr_1.0.1
  qpdf_1.3.0               R6_2.5.1                 ragg_1.2.5
rapidjsonr_1.2.0         rappdirs_0.3.3           raster_3.6-14
  rayimage_0.9.1           rayshader_0.24.10        RColorBrewer_1.1.3
Rcpp_1.0.10              RcppArmadillo_0.12.0.1.0 RcppEigen_0.3.3.9.3
  RcppRoll_0.3.0           readr_2.1.4
readwritesqlite_0.2.0    readxl_1.4.2             RefManageR_1.4.0
rematch_1.0.1
  rematch2_2.1.2           remotes_2.4.2            reprex_2.0.2
rgdal_1.6-4              rgeos_0.6-1              rgl_1.0.1
  RgoogleMaps_1.4.5.3      rJava_1.0-6              rlang_1.1.1
rmarkdown_2.21           RPostgres_1.4.5          RPostgreSQL_0.7-5
  RSQLite_2.3.0            rstudioapi_0.14          rvest_1.0.3
s2_1.1.2                 sass_0.4.5               scales_1.2.1
  selectr_0.4.2            servr_0.25               sf_1.0-9
sfheaders_0.4.0          shiny_1.7.4              shinyjs_2.1.0
  slippymath_0.3.1         snakecase_0.11.0
sourcetools_0.1.7.1      sp_1.6-0                 splines_4.2.2
stats_4.2.2
  stringi_1.7.12           stringr_1.5.0            survival_3.5.3
svglite_2.1.1            sys_3.4.1                systemfonts_1.0.4
  terra_1.7-3              terrainmeshr_0.1.0       textshaping_0.3.6
tibble_3.2.1             tidyhydat_0.5.9          tidyr_1.3.0
  tidyselect_1.2.0         tidyverse_2.0.0          timechange_0.2.0
tinytex_0.45             tools_4.2.2              triebeard_0.3.0
  tzdb_0.4.0               units_0.8-1              urltools_1.7.3
utf8_1.2.3               utils_4.2.2              uuid_1.1.0
  V8_4.2.2                 vctrs_0.6.2              viridis_0.6.2
viridisLite_0.4.1        vroom_1.6.3              webshot_0.5.4
  websocket_1.4.1          withr_2.5.0              wk_0.7.1
```

```
XML_3.99.0.13           xml2_1.3.3              xtable_1.8-4
yaml_2.3.7              yesno_0.1.2             zip_2.2.2
  zyp_0.11
```